

MATERIAL SAFETY DATA SHEET



1. IDENTIFICATION

Revision Date	December 2005			
Product Name	HYPOCHLORITE SOLUTION			
Other Names	SODIUM HYPOCHLORITE SOLUTION; POOL CHLORINE; CHLORINATED SODA SOLUTION; CHLORINATED BLEACH.			
Uses	Bleaching agent, purification of water, sanitizer, detergents, chemical manufacture, councils, textiles, and waste treatment.			
Contact Information	Organisation	Location	Telephone	Ask For
	Redox Pty Ltd	2 Swettenham Road Minto NSW 2566 Australia	+61 2 97333000	Technical Officer
		11 Mayo Road Wiri Auckland 2104 New Zealand	+64 9 2506222	
	Poison Information Centre	Westmead NSW Australia	131126	
	Chemcall 24 Hour Emergency Number	Australia New Zealand	1800-127406 0800-243622	
	National Poisons Centre	New Zealand	0800-764766	

2. HAZARD IDENTIFICATION

Hazardous according to criteria of NOHSC/ASCC.

Dangerous According to the Australian Code for the Transport of Dangerous Goods.

Classified as Dangerous Goods According to NZS 5433:1999.

CORROSIVE

Risk Phrases

R31 Contact with acids liberates toxic gas.
R34 Causes burns.

Safety Phrases	S1/2	Keep locked up and out of the reach of children.
	S24/25	Avoid contact with skin and eyes.
	S26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
	S27	Take off immediately all contaminated clothing.
	S28:SOHYCL	After contact with skin, wash immediately with plenty of water.
	S36/37/39	Wear suitable protective clothing, gloves and eye/face protection.
	S45	In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
	S50:SOHYCL	Do not mix with acids.
	S61	Avoid release to the environment. Refer to special instructions/Material Safety Data Sheets.

ERMA New Zealand Approval Code HSR004692

HSNO Hazard Classification 8.2C 8.3A 9.1B

This Material Safety Data Sheet may not provide exhaustive guidance for all HSNO Controls assigned to this substance. The ERMA Web Site should be consulted for a full list of triggered controls and cited regulations.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	Chemical Entity	CAS Number	Proportions (%)
	SODIUM HYPOCHLORITE	[7681-52-9]	10 - 20
	WATER	[7732-18-5]	BALANCE

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure.

Swallowed	Immediately rinse mouth with water. Give water to drink. DO NOT induce vomiting. Seek immediate medical assistance.
Eye	Immediately irrigate with copious quantities of water for at least 15 minutes holding eyelids open. Take care not to wash contaminated water into the non-affected eye. Seek IMMEDIATE medical attention!
Skin	Immediately wash contaminated skin with lukewarm water for at least 30 minutes. Under running water, remove contaminated clothing. Completely decontaminate clothing before reuse. Seek immediate medical attention.
Inhaled	Remove victim from exposure to fresh air. If not breathing, apply artificial respiration. If breathing is difficult, give oxygen. Seek medical attention immediately.

Advice to Doctor	Treat symptomatically based on individual reactions of patient and judgement of doctor. NOTE: For advice in an emergency, contact a Poisons Information Centre (Australia 13-11-26 or New Zealand 0800-764-766).
Aggravated medical conditions caused by exposure	Repeated or prolonged skin contact may cause chronic contact dermatitis.

5. FIRE FIGHTING MEASURES

Extinguishing Media	In case of fire, appropriate extinguishing media include water spray, fog, or mist, foam, carbon dioxide, or dry chemical powder.
Hazards from Combustion Products	Non-combustible liquid. Will not burn, or support combustion. However, reaction with incompatible materials can generate sufficient heat to ignite nearby combustible materials. Incompatible with strong oxidizing agents, strong acids, metals such as aluminium, tin, and zinc, peroxides, reducing agents, metal salts, and sources of ignition. When involved in a fire or in contact with strong acids, this product may liberate toxic chlorine gas. When in contact with incompatible metals, reaction may produce flammable and highly explosive hydrogen gas.
Special Protective Precautions and Equipment for Fire Fighters	Fire fighters should wear a positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots and gloves). Clear fire area of all non-emergency personnel. Stay upwind. Keep out of low areas. Eliminate ignition sources.
Flammability Conditions	Product is a non-flammable liquid.
Additional Information	
Hazchem Code	2X

6. ACCIDENTAL RELEASE MEASURES

Emergency Procedures	Personnel involved in the clean up should wear full protective clothing. Eliminate all sources of ignition. Evacuate all unnecessary personnel. Increase ventilation. Stop leak if safe to do so. Avoid walking through spilled product as it may be slippery. Do NOT neutralize with acids due to possible release of toxic chlorine gas. Do NOT let product reach drains or waterways. If product does enter a waterway, advise the Environmental Protection Authority or your local Waste Management.
Methods and Materials for Containment and Clean Up	Soak up spilled product using absorbent non-combustible material such as sand or soil. Avoid using sawdust or cellulose. Do NOT neutralize with acids due to possible release of toxic chlorine gas. When saturated, collect material and transfer to suitable, labelled, dry, sealable chemical-waste containers and dispose of promptly as hazardous waste.

7. HANDLING AND STORAGE

Precautions for Safe Handling	Ensure an eye bath and safety shower are available and ready for use. Observe good personal hygiene practices and recommended procedures.
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Wash thoroughly after handling. Take precautionary measures against static discharges by bonding and grounding equipment. This product is sensitive to mechanical impact and static discharge. Avoid contact with eyes, skin and clothing. Do not inhale vapour/fumes. When diluting the solution, add material to water.

Conditions for Safe Storage (Including Any Incompatibles)	Store in a cool, dry, well-ventilated area. Keep containers tightly closed when not in use. Inspect regularly for deficiencies such as damage or leaks. Protect against physical damage. Store away from incompatible materials including strong oxidizers, strong acids, metals, peroxides, reducing agents, metal salts and sources of ignition. Bulk storage tanks should be diked. Protect from direct sunlight and static charges. Store at ambient temperature. This product has a UN classification of 1791 and a Dangerous Goods Class 8 (corrosive) according to The Australian Code for the Transport of Dangerous Goods By Road and Rail.
Container Type	Use corrosion-resistant structural materials. Containers made of inert plastics or nickel alloys are preferred.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

National Exposure Standards	No exposure standard has been established for this product by The Australian Safety and Compensation Council (ASCC). However, the following exposure standard applies for a decomposition product; Chlorine Cas 7782-50-5 TWA = 3mg/m ³ Peak Limitation. NOTE: The exposure value at the TWA is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week.
Biological Limit Values	No information available on biological limit values for this product.
Engineering Controls	A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Use a corrosion resistant ventilation system separate from other exhaust ventilation systems. Exhaust directly to the outside.
Personal Protection	RESPIRATOR: Wear an approved respirator with suitable filter for organic gases and vapours if engineering controls are inadequate (AS1715/1716). EYES: Chemical goggles to prevent splashing in the eyes (AS1336/1337). HANDS: Butyl rubber gloves break through time 4hr (AS2161). CLOTHING: Chemical-resistant coveralls and safety footwear (AS3765/2210).

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Yellow/Slightly Hazy Liquid
Formula	NaOC1
Odour	Distinctive odour
Vapour Pressure	Not applicable.
Vapour Density	Not applicable.
Boiling Point	Not applicable.
Melting Point	18 deg C

Solubility in Water	Soluble
Specific Gravity	Approx 1.2 (Water = 1)
Flash Point	Not applicable.
pH	12 ()
Lower Explosion Limit	Not applicable.
Upper Explosion Limit	Not applicable.
Ignition Temperature	Not applicable.
Specific Heat Value	Not applicable.
Particle Size	Not applicable.
Flame Propagation/Burning Rate of Solid Materials	Not applicable.
Properties of Materials That May Initiate or Contribute to Fire Intensity	Not applicable.
Potential for Dust Explosion	Product is a liquid.
Reactions that Release Flammable Gases	Contact with metals may produce flammable and explosive hydrogen gas.
Fast of Intensely Burning Characteristics	Not applicable.
Non-flammables That Could Contribute Unusual Hazards to a Fire	Not applicable.
Release of Invisible Flammable Vapours and Gases	Not applicable.
Decomposition Temperature	Not applicable.
Additional Information	Decomposition: Decomposes in hot water. Corrosivity : Corrosive to aluminium, tin and zinc. Corrosive to steel at elevated temperatures.

10. STABILITY AND REACTIVITY

Chemical Stability	Product is stable under normal conditions of use, storage and temperature.
Conditions to Avoid	Avoid excessive heat, direct sunlight, moisture, freezing, static charges

and high temperatures.

Incompatible Materials

Incompatible with strong oxidizing agents, strong acids, metals such as aluminium, tin, and zinc, peroxides, reducing agents, metal salts, and sources of ignition.

Hazardous Decomposition Products

When involved in a fire or in contact with strong acids, this product may liberate toxic chlorine gas. When in contact with incompatible metals, reaction may produce flammable and highly explosive hydrogen gas.

Hazardous Reactions

Hazardous Polymerization does not occur.

11. TOXICOLOGICAL INFORMATION

Toxicity Data Oral LD50 Rat: 9810mg/Kg

Health Effects - Acute

Swallowed

Should ingestion occur, severe pain, burning of the mouth, throat and oesophagus, vomiting, diarrhoea, collapse and possible death may result.

Eye

A severe eye irritant. Can penetrate deeply causing irritation or severe burns depending on the concentration and duration of the exposure. In severe cases, ulceration and permanent damage may occur.

Skin

Corrosive. Product is capable of causing burns. Corrosion will continue until removed. Severity depends on concentration and duration of exposure. Burns are not immediately painful; onset of pain may be minutes to hours.

Inhaled

Irritation of the nose, throat and lungs would occur due to the corrosive nature of Sodium Hypochlorite.

12. ECOLOGICAL INFORMATION

Ecotoxicity No data available.

Persistence and Degardability No information available on persistence/degradability for this product.

Mobility Completely soluble in water.

Environmental Fate (Exposure) Do NOT let product reach waterways, drains and sewers.

Bioaccumulative Potential No information available on bioaccumulation for this product.

13. DISPOSAL CONSIDERATIONS

Disposal Dispose of in accordance with all local, state and federal regulations. All empty packaging should be disposed of in accordance with Local, State and Federal Regulations or recycled/reconditioned at an approved facility.

Special Precautions for Land Fill or Incineration Contact a specialist disposal company or the local waste regulator for advice. This should be done in accordance with 'The Hazardous Waste Act'.

14. TRANSPORT INFORMATION

Land Transport

UN Number	1791
Shipping Name	HYPOCHLORITE SOLUTION
Dangerous Goods Class	8
Subsidiary Risk	Not applicable.
Pack Group	III
Precaution for User	CORROSIVE
Hazchem Code	2X



Sea Transport

UN Number	1791
Shipping Name	HYPOCHLORITE SOLUTION
Dangerous Goods Class	8
Subsidiary Risk	Not applicable.
Pack Group	III
Precaution for User	CORROSIVE
Hazchem Code	2X



15. REGULATORY INFORMATION

Classified as hazardous according to The Australian Safety and Compensation Council (ASCC) and Annex I European Directive 67/548/EEC. EINECS No: 231-668-3 Sodium Hypochlorite.

Poisons Schedule	5
EPG	37
AICS Name	HYPOCHLOROUS ACID, SODIUM SALT.
NZ Toxic Substance	No data available.
HSNO Hazard Classification	8.2C 8.3A 9.1B
ERMA Approval Code	HSR004692

16. OTHER INFORMATION

Literature References No data available.

Sources for Data No data available.

Legend to Abbreviations and Acronyms

<	less than
>	greater than
AICS	Australian Inventory of Chemical Substances
CAS	Chemical Abstracts Service (Registry Number)
cm²	square centimetres
CO₂	Carbon Dioxide
COD	Chemical Oxygen Demand
deg C (°C)	degrees Celsius
ERMA	Environmental Risk Management Authority
g	gram
g/cm³	grams per cubic centimetre
g/l	grams per litre
HSNO	Hazardous Substance and New Organism
IDLH	Immediately Dangerous to Life and Health
immiscible	liquids are insoluble in each other
kg	kilogram
kg/m³	kilograms per cubic metre
LC₅₀	LC stands for lethal concentration. LC ₅₀ is the concentration of a material in air which causes the death of 50% (one half) of a group of test animals. The material is inhaled over a set period of time, usually 1 or 4 hours.
LD₅₀	LD stands for Lethal Dose. LD ₅₀ is the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals
ltr	Litre

m3	cubic metre
mbar	millibar
mg	milligram
mg/24H	milligrams per 24 hours
mg/kg	milligrams per kilogram
mg/m3	milligrams per cubic metre
Misc	miscible
miscible	liquids form one homogeneous liquid phase regardless of the amount of either component present
mm	millimetre
mPa.s	milli Pascal per second
N/A	Not Applicable
NIOSH	National Institute for Occupational Safety and Health
NOHSC	National Occupational Health and Safety Commission
OECD	Organization for Economic Co-operation and Development
PEL	Permissible Exposure Limit
ppb	parts per billion
ppm	parts per million
ppm/2h	parts per million per 2 hours
ppm/6h	parts per million per 6 hours
RCP	Reciprocal Calculation Procedure
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value
tne	tonne
TWA	Time Weighted Average
ug/24H	micrograms per 24 hours
UN	United Nations (number)
wt	weight



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This MSDS summarises Redox Pty Ltd best knowledge of the health and safety hazard information of the selected substance and how to safely handle the selected substance in the workplace however Redox Pty Ltd expressly disclaims that the MSDS is a representation or guarantee of the chemical specifications for the substance.

Each user should read the MSDS and consider the information in the context of how the selected substance will be handled and used in the workplace including its use in conjunction with other substances.

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